

GRIRO S.A.

**past, present and
future**

December 2024



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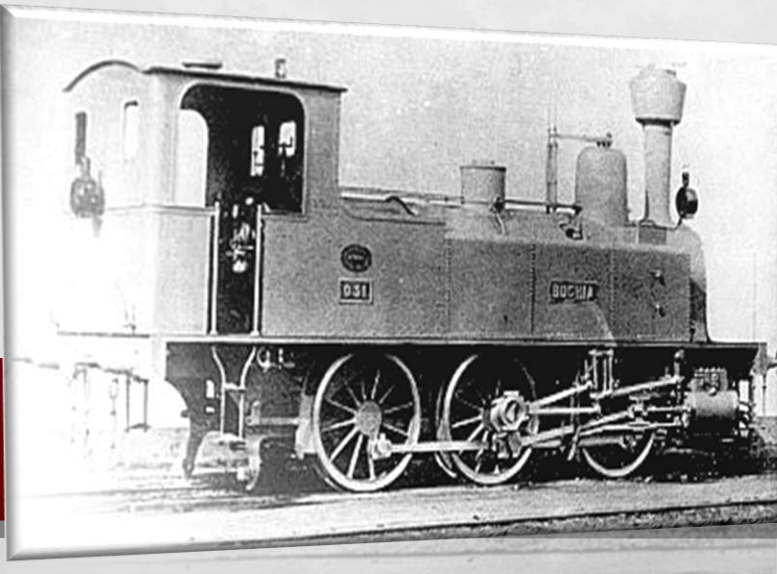
www.griro.ro / www.griroenergy.com



A. Company profile – a change for the better

GRIRO, was established in April 1897 by Royal decree by King Carol I of Romania, at the present location in Bucharest, as the “Central Railways Shops” for repairing of steam engines and wagons. GRIRO has become in more than 20 years, the most important workshop of the Romanian National Railways for manufacturing and repairing of locomotives and railways cars.

Since 1961, the company has changed its line of business, being authorized to design and manufacture process equipment for Oil&Gas and during the years, its facilities as well as its capability have been proved and recognized for these activities by many clients and inspection organizations worldwide.



A. Company profile – a change for the better

December 2004 – GRIRO becomes a private company

Shareholders:

- | | | |
|----------------------------------|---|------------|
| ▪ Laminate S.A. | } | 97% |
| ▪ Relco S.A. | | |
| ▪ Employees's Association | | 3% |

GRIRO's authorizations & certificates are:

– **ISO 9001/14001/45001**

– **PED 97/23 EC Modul H and H1** by Lloyd's Register

– **ASME (S, U, U2 stamps)** by **American Society of Mechanical Engineers**

– **AD 2000 Merkblatt HP 0 (TRB 200) and TRD 201** by **TÜV RHEINLAND**

– **ONORM EN ISO 3834-2** by **TUV Austria**

– **LABORATORIES** are accredited **EN 17025:2005** by **RENAR**

– **CNCAN authorization**(National Commission for Nuclear Activity Control)

– **Manufacture Licensing of Special Equipments**(Boiler Level A & Pressure Vessel Level A1+A2)

certified by **General Administration of**

Quality Supervision, Inspection and

Quarantine of P.R.China



A. Company profile – a change for the better

September 2019 – GRIRO shareholders have changed, and the the main production activity was relocated in less then 1 year from the center of Bucharest, to the southern industrial area of IMGB, creating the new company GRIVITA ROSIE, all of this due to the logistic development of the Romanian capital



CALEA GRIVITEI old industrial platform → IMGB South Bucharest platform

B. Our Legacy

The **GRIRO**'s facilities, consist of several office buildings workshop and warehouses with an overall area of more then 11.5 hectares of witch the covered space with workshops being +7 hectares.

Our company was an integrated manufacturer with all the production facilities needed for process equipment manufacturing and inspection from cutting, bending, forging, welding, machining, heat treatment, non-destructive examinations, mechanical tests, hydraulic, pneumatic and leak tests to blasting, painting, packing as well as inland transportation.

GRIRO's maximum fabrication capabilities for Process Equipment are:

Diameter	8.5 meter
Length	60 meter
Wall/Plates Thickness (Hot/Cold Bending)	360/175 mm
Max. Weight	320 Tons

GRIRO's Engineering Division is staffed with experienced and qualified engineers applying the following codes and standards:

- **ASME & AD MERKBLATT,**
- **STOOMWEZEN & TEMA**
- **GOSGORTEHNADZOR**
- **API 661** and others



C. Our Commitment

To the world

- To keep the main industrial activity(pressure equipment, EPC, design and manufacturing), but in the same time to develop new business channels in our target markets in which we operate, namely in the field of Oil&Gas, Energy, Nuclear and Heavy Industry;
- To invest more then 8 mil. €, of which :
 - 4 mil. € for the main activity;
 - 4 mil. € to develop secondary activities;
 - 0.5 mil. € in environment protection & survey - already performed;
- To increase our Turnover during 2025 ÷ 2030 at yearly pace of 20%

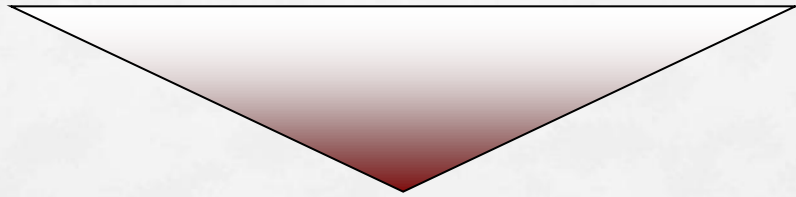
To our shareholders & employees

- To rebrand ourself



D. Our plan for the future

Rebranding and Opening new Business Units



- Company reorganization
- Territorial Company Reorganization
- Progressive Growth of Turnover



D. Our plan for the future – company reorganization

1. Company reorganization by Business Units with proper MP

- Structure flattening to and by:
 - increase responsibilities;
 - get quick response to instructions;
 - get better control of activities;
 - increase productivity;
 - financial stimulus for the deficitary jobs;
 - allow easier communication between departments.

2. Territorial reorganization

- moving the final assembly facility of the machines to the Danube port of the city of OLTENITA



D. Our plan for the future – Investing

Our aim:

- increased Turnover, quality & productivity

By investing in:

- industrial workshops renovations ;
- automation installations for storage and sale
- the energy independence of the GRIRO plant by installing solar panels + storage batteries, even with the development of BESS capacities
- developing the import of electrical equipment from CHINA for assembly and resale on the European market (products such as heat pumps, electrical transformers, storage batteries, electric car charging stations and others).



D. Our plan for the future – Investing

Our aim:

- Becoming a national and European producer of electricity from gas plants and/or storage batteries, but also an EPC contractor for energy projects

By investing in:

- we have already obtained in 2024 a construction permit and TSO's technical permit(ATR) for 2 gas power plants in Mija, in Dambovita county (about 80 km from Bucharest) for 40MW capacity;
- we are carrying out a feasibility study for the initiation of the construction of a 70 MW BESS-Stand Alone project in the same location, as well a 20 MW gas plant on the industrial platform of South Bucharest;
- we are preparing the technical project for the creation and use of the burnt gases from the gas plants, for the local thermal power plant, but we are also working on the design of a hydrogen-based installation for these energy facilities developed by our company.



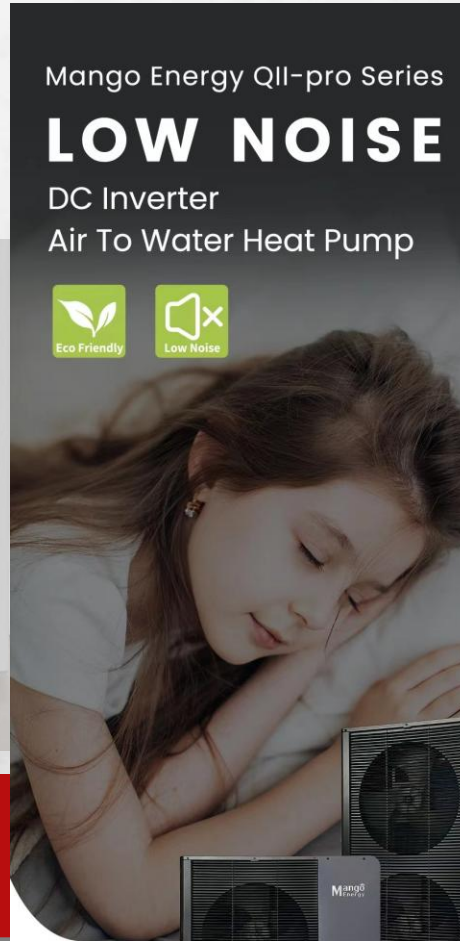
E. Commercialized Products – 1. HEAT PUMPS

Our range GRIRO ENERGY contains 64 pcs of 9÷25 kW power capacity heat pumps for commercial or residential use(220 V or 380 V charge) & 64 hydronic tanks of 150 liters capacity



E. Commercialized Products – 1. HEAT PUMPS

The MANGO ENERGY brand, having a total of 136 pcs of heat pumps for commercial or residential use, with the power range 9÷25 kW for DC/AC current & 10 pcs of 150 liters heat boilers



E. Commercialized Products – 2. STORAGE BATTERIES

GRIRO can import, upon request, 4 brands of storage batteries with a capacity of up to 5 MW, by integrating various equipment in a single kit, either in a turnkey BESS container, with 1 or 2 cycles per day and a low consumption of energy, as well as an extended warranty for years.



E. Products – 3. ELECTRICAL TRANSFORMERS

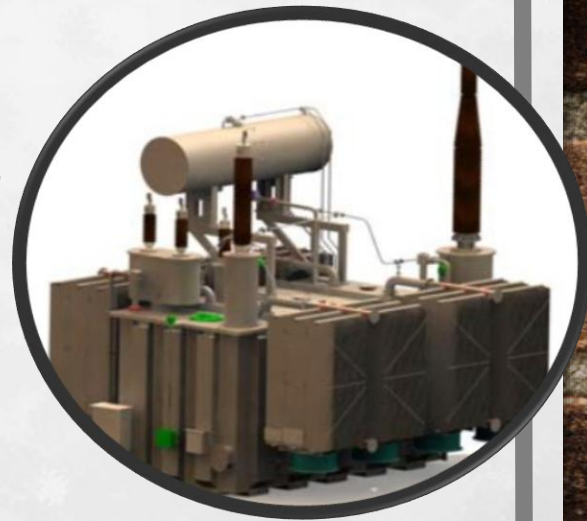
GRIRO can import, upon request, medium and high voltage electrical transformers as follows(of min. 500 kVA):

- ❑ **oil-immersed for lines of maximum 850 kV and 1500 MVA capacity;**
- ❑ **cast resin dry type, for 110 kV line and max. capacity 63MVA;**



E. Products – 3. ELECTRICAL TRANSFORMERS

- The tests of these transformers are done in accordance with IEC standards (FAT can also be performed for the end customer), containing short circuit tests, dielectric & mechanical stress or/with impulse distribution tests.
- The production terms of several months will be offered depending on the quantity and capacity, adding 2-3 months for the naval transport to Romania.



Calculated out put files of short circuit

I-L

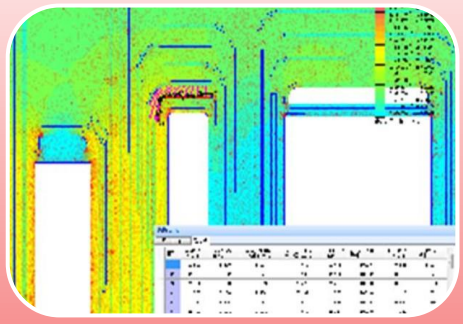
NUMBER OF PHASES 3.0
 FREQUENCY 60.00
 NUMBER OF WOUND LIMBS 3.0
 ACTION OF WINDOW HEIGHT CALC. 1.0
 LOWER BOUNDARY 0.0
 UPPER BOUNDARY 2010.0
 IRE DIAMETER 1250.0
 STANCE WINDING-TANK 300.0
 /CU SHIELD 0.0

SYSTEM SHORT CIRCUIT GVA 0.000
 OPTIONAL PU IMPEDANCE 0.1779
 PEAK FACTOR 1.968
 LOSS FACTORS
 TANK 45.00
 LEG 9.00
 YOKE 20.00
 SCALE FLUX PLOT 1.000
 NO. OF FLUX LINES 25.0

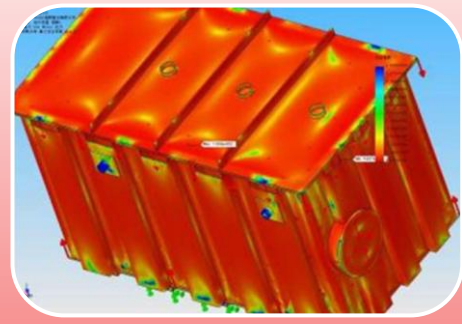
MINIMUM NUMBER	D	Y	2.0
INNECTION	555 000	555 000	
IA	25 000	267 000	

YER	LAST	INNER	RADIAL	TERM	PAR	DIR	CU/AL	SPACER	BLOCKS
SEGM.	RAD	WIDTH	NO.	GROUPS	CUR.			NUMBER	WIDTH
9.0	654.0	127.0	1.0	1.0	-1.0	CU	36.0	30.0	
12.0	846.0	161.0	2.0	1.0	1.0	CU	40.0	30.0	
13.0	1076.0	25.5	2.0	1.0	1.0	CU	40.0	50.0	

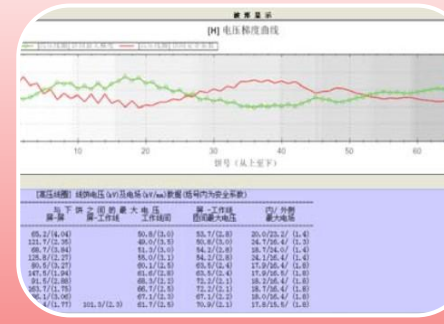
Short Circuit TEST



DIELECTRIC STRESS



MECHANICAL STRESS



IMPULSE DISTRIBUTION

The end - we thank the shareholders, employees, clients, suppliers and collaborators of the company for over 127 years of industrial history!

GRIRO
ENERGY

Established in 1897 - 127 years of history

Established in 1897 - 127 years of history

